

Amendments to the Drawings:

No amendments are made to the Drawings herein.

REMARKS

By the foregoing Amendment, Paragraphs [0015] and [0016] of the Specification and Claims 1, 8, 9, 13 and 14 are amended. Entry of the Amendment, and favorable consideration thereof, is earnestly requested.

Paragraphs [0015] and [0016] of the Specification have been amended to correct errors in the reference numerals.

Claim 11 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully submits that this rejection has been obviated by the amendments made to Claim 1.

Claims 1-7 and 13 stand rejected under 35 U.S.C. §102(e) as being anticipated by Konstorum et al. (U.S. Patent No. 6,749,560), Claims 1-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sosnowski et al. (U.S. Patent No. 4,911,148), Claims 14 and 15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Sugiyama et al. (U.S. Patent No. 6,520,214), and Claims 8-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Konstorum et al. in view of Sugiyama et al. Applicant respectfully asks the Examiner to reconsider these rejections in view of the above Amendments and the below Remarks.

The present invention is directed to an endoscope insertion shaft that includes a tubular member having an axis and including at least one aperture for imparting desirable mechanical characteristics to the shaft, along with a composite, laminated or fused sheath having a plurality of layers encasing or jacketing the tubular member. Claims 1, 13 and 14, all independent claims, have

been amended to more specifically recite the specific construction of the sheath, and each claim now requires, among other limitations, (i) a tubular member having an axis and including at least one aperture for increasing the flexibility thereof, (ii) a braided layer, (iii) a laminating layer, and (iv) a wear layer.

Applicant respectfully submits that none of the cited prior art, either alone or in combination, discloses, teaches or suggests an endoscope insertion shaft having this configuration.

Konstorum et al. discloses an endoscope having a tube 40 having an axis and a plurality of apertures 46 for increasing the flexibility thereof, along with a cover 32. Moreover, as recognized by the Examiner, Konstorum et al. does suggest that the "cover could also include a structural reinforcement." (see column 5, lines 8-15). Thus, at most, Konstorum et al. could be considered as suggesting two layers (i.e., the cover 32 and possibly the structural reinforcement), in addition to the tube 40. As such, Konstorum et al. can not anticipate any of Claims 1, 13 or 14, which all require at least three very specific layers (i.e., a braided layer, a laminating layer, and a wear layer) in addition to the tubular member.

Sosnowski et al. similarly discloses an endoscope having a deflectable end segment 5 having a plurality of cutouts 35 formed therein, along with a sheath 24. Thus, Sosnowski et al. discloses only one layer (e.g., sheath 24), in addition to the deflectable end segment 5. As such, Sosnowski et al. can not anticipate any of Claims 1, 13 or 14, which all require at least three very specific layers (i.e., a braided layer, a laminating layer, and a wear layer) in addition to the tubular member.

Sugiyama et al. discloses a flexible endoscope which includes a spirally-wound tube 10, a braided tube 20 covering the spirally-wound tube 10, and a sheath 30 provided on the braided tube 20. The sheath material is fused and coated on the braided tube 20 to form the sheath 30. Thus, Sugiyama et al. discloses two layers (i.e., the braided tube 20 and the sheath 30), in addition to the spirally-wound tube 10. As such, Sugiyama et al. can not anticipate any of Claims 1, 13 or 14, which all require at least three very specific layers (i.e., a braided layer, a laminating layer, and a wear layer) in addition to the tubular member. Neither can Sugiyama et al. anticipate any of Claims 1, 13 or 14, which all require a tubular member including at least one aperture for increasing the flexibility thereof, since Sugiyama et al. instead discloses a spirally-wound tube 10.

Moreover, Applicant respectfully submits that no combination of the cited prior art would render obvious the present invention, as claimed. As discussed above, all of Claims 1, 13 and 14 require, among other limitations, (i) a tubular member having an axis and including at least one aperture for increasing the flexibility thereof, (ii) a braided layer, (iii) a laminating layer, and (iv) a wear layer. Also as discussed above, none of the cited prior art, taken individually, discloses, teaches or suggests these limitations. Moreover, Applicant notes that it is well settled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination or modification. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990).

In the present case, Applicant respectfully submits that even if the prior art references were combined, there still would be no suggestion to make modifications which would lead to the claimed invention.

More specifically, if Konstorum et al. were combined with Sugiyama et al. as suggested by the Examiner, the resulting hypothetical device would be one having a tube having an axis and a plurality of apertures for increasing the flexibility thereof (as taught by Konstorum et al.), along with a braided tube covering the tube, and a sheath provided on the braided tube (as taught by Sugiyama et al.). The sheath material in this hypothetical device would be fused and coated on the braided tube to form the sheath (also as taught by Sugiyama et al.). Thus, the hypothetical device resulting from a combination of Konstorum et al. with Sugiyama et al. would include two layers (i.e., the braided tube and the sheath taught by Sugiyama et al.), in addition to the apertured tube taught by Konstorum et al. As such, even the combination of Konstorum et al. with Sugiyama et al. would not disclose, teach or suggest the requirements of Claims 1, 13 or 14, which all require at least three very specific layers (i.e., a braided layer, a laminating layer, and a wear layer) in addition to the tubular member.

Moreover the hypothetical device resulting from a combination of Konstorum et al. with Sugiyama et al., with its braided tube and sheath material fused and coated on the braided tube to form the sheath (as taught by Sugiyama et al.), would suffer from a number of disadvantages similar to those discussed in the Background section of the application. The fused and coated sheath material of the hypothetical device would, like liquid resins discussed in the Background section of the application: (i) not provide a durable lamination due to partial cross-linking and tend to break down over time, losing its elasticity, and (ii) not provide a durable wear layer due to the partial cross-linking and tend to break down or delaminate over time. These problems are avoided by the present invention, as claimed, which includes at least three very specific layers (i.e., a braided layer, a laminating layer, and a wear layer) in addition to the tubular member.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1-15, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,



Wesley W. Whitmyer, Jr., Reg. No. 33,558
Todd M. Oberdick, Reg. No. 44,268
ST. ONGE STEWARD JOHNSTON & REENS LLC
986 Bedford Street
Stamford, Connecticut 06905-5619
(203) 324-6155
Attorneys for Applicant